# EXHIBIT A ATTACHMENT A-3
# RESUMES

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**EDUCATION**

**Ph.D. in Environmental Engineering** 2005
*University of California, Los Angeles*
Area of focus: mass transfer in environmental processes

**Master of Science in Environmental Engineering** 2003
*University of California, Los Angeles* (3.7/4.0)
Area of focus: environmental processes

**Chemical Engineering *Laurea* (M.S. equivalent)** 2002
*University of Padua, Italy* (105/110)
Areas of focus: polymer engineering, air pollution engineering, and wastewater treatment

**EXPERIENCE**

*University of California, Irvine – Civil & Environmental Engineering Department*
**Assistant Professor** 2008-present
Principal Investigator of the Environmental Process Laboratory.

*University of California, Los Angeles – Civil & Environmental Engineering Department*
**Lecturer and Postdoctoral Scholar** 2006-2007
Energy-conservation in wastewater treatment project.
Duties: supervision of project, writing of periodical reports

**Graduate Research Engineer** 2002-2005
(2004-2005) Energy-conservation in wastewater treatment project.
Duties: senior graduate student supervisor
(2002-2004) Stormwater Research Group.
Duties: field sampling, computer lab administrator, data analysis

**Teaching Assistant** 2003-2004
CEE155 senior/graduate class “Unit Operations in Environmental Engineering” (Fall only).
Duties: holding discussion sections, preparing/grading homework, handouts and exams

**Visiting Scholar** Jul.-Dec. 2001
Mass-transfer in biological wastewater treatment modeling project.
Duties: full responsibility on project

*Applied Research Group of the City of Los Angeles, Bureau of Sanitation. – Los Angeles, CA*
**Engineering Intern** Aug.-Nov. 2001
Duties: formatting engineering reports, preparing power point presentations, assist in paper editing.

*University of California, Los Angeles – Chemical Engineering Department*
**Visiting Undergraduate Researcher** Apr.-Jun. 2000
RO treatment for water reclamation project. Advisors: Prof. Y. Cohen, Dr. J. Glater
Duties: experimental evaluation of anti-scalant polyelectrolytes for RO membranes

*Engineers Without Borders – UCLA* 2004-2005
**President and Project Manager**
Duties: full responsibilities of chapter supervision, PR, treasury, networking, Project Manager for two environmental engineering international projects (Thailand, Mexico), mentor of two undergraduate research projects.
*Los Angeles, CA*

**Part-Time Engineering Consultant** 2001-present
Engineering consultant on numerous engineering projects. Partnered with public utilities, city/county governments, private consulting firms, in the United States, Mexico, Canada, and Italy. Duties: analysis, evaluation, testing, and design of unit operations for wastewater treatment and of energy efficiency and monitoring systems.

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**ALEX EKSTER**
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**SUMMARY**

Thirty years of experience in optimization and automation of water/wastewater treatment processes.

**EDUCATION**

Ph.D. Moscow Power Engineering Institute, Moscow, 1988
Engineer, Odessa Polytechnic Institute, Odessa, 1978

**PROFESSIONAL REGISTRATIONS**

California registered mechanical engineer
Grade IV California wastewater treatment operator

**PROFESSIONAL MEMBERSHIPS**

Chair of Water Environment Federation (WEF) Information technology and Automation committee

**PUBLICATIONS**

Authored and co-authored several dozens professional presentations and publications, contributed optimization and automation sections to a forth (2002) edition of Metcalf and Eddy Textbook"Wastewater Engineering" , WEF Manual of Practice on Biological Nutrient Removal and WEF Manual of Practice on Instrumentation and automation

**AWARDS**

Numerous research awards including WEF Philip F.Morgan Medal

**COMPETITIVE GRANTS**

California Energy Commission grant for development of dissolved oxygen control expert/control system
California Energy Commission grant for development of SRT/DO optimization expert/control system

**EMPLOYMENT**

2000-present. Ekster and Associates Inc., Fremont, CA. principal
1990-2000. Santa Clara Water Pollution Control Plant, San Jose, Ca. Associate Engineer.
1989. Metcalf and Eddy, Santa Clara,, Ca. Senior Design Engineer.

**PROFESSIONAL EXPERIENCE**

**Energy audits and development energy savings measures**

Developed solids retention time (SRT), dissolved oxygen (DO) control, and optimization of SRT/DO set points software packages
Developed and managed implementation of energy savings measures at the San Jose/ Santa Clara Water Pollution Control Plant resulted in $600,000 annual savings
Developed and overseeing implementation of energy saving measures at the Oxnard WWTP that resulted in 25% energy savings
Developed energy saving measures for San Elijo wastewater treatment plant aimed at 50% energy savings
Developed energy savings measures for Inland Empire Water Utility (4 treatment plants) aimed at 15% reduction of energy savings and 30% increase of biogas production
Developed a method for forecasting energy savings achieved by activated sludge optimization and automation

**Clarification**

Developed and managed an award-winning method of primary clarifers testing
Evaluated an effect of sludge depth on primary clarifers performance
Developed and managed study of an effect of storm events on primary and secondary clarifiers at the 167 MGD plant.
Developed and managed an award-winning optimization of secondary clarifiers operation using statistical analysis.
Developed and managed studies of series clarification at a 10 MGD pilot plant.
Developed and managed an award-winning study of particle distribution in BNR

**On-line monitoring and automation**

Developed an expert/control system for optimization of pump and blower stations operation

Developed award-winning expert/control system for sludge age and clarifier sludge depth and expert/control system for the dissolved oxygen

Developed and managed testing protocol for state-of the-art on-line water analyzers and flow meters.

Developed a unique specification format for on-line analyzers.

Developed and managed implementation of an automatic sensor fault detection system.

Developed a performance based specification format for on-line water analyzers and flow meters.

Developed a unique automatic process troubleshooting system using on-line analyzers.

Developed and managed study of automatic sludge depth control in primary clarifers.

Developed and managed implementation of airflow control for the BNR process using respirometric data.

Developed and managed implementation of airflow control for the BNR process using ammonia and nitrite analyzers.

**Biological treatment**

Developed an award-wining step-feed concept for the BNR process and implemented it at the 20 MGD pilot plant.

Optimized operation of the BNR processes using GPS-X (a computerized IAWQ activated sludge model).

Designed and managed *Nocardia* control studies at the 50 MGD BNR system.

Designed and managed filamentous bulking control studies at the 20 MGD BNR system

Developed and managed a master plan for conversion of two-stage nitrification into the BNR process at the 167 MGD plant.

Participated in the biological alkalinity recovery studies at the 30 MGD pilot plant.

Participated in a design of a 5 MGD trickling filter-activated sludge system.

Optimized performance of a 32 MGD trickling filter-activated sludge treatment system.

Participated in preliminary design of a 1 MGD oxidation ditch system.

Participated in construction inspection and start-up of a 2 MGD trickling filter system. effluent.

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# RESUMES

**Lory E. Larson**
626-633-7161
6042 B Irwindale Ave. Irwindale, CA 92704
lory.larson@sce.com

**Education:**

BS, Civil Engineering, University of California, Los Angeles, 1971
MS, Civil Engineering, California State University, Long Beach, 1978

**Professional Experience:**

*Southern California Edison Company, Irwindale, CA 1999 – Present*
**October 1999 – Present, Consulting Engineer/Supervisor**
Responsible for management and completion of a multi-million dollar research programs to improve energy efficiency by advancing technologies in the water and wastewater industry. Expanded the water/wastewater research program to focus on wastewater treatment plant energy efficiency improvements and alternate uses for reclaimed water. Managed and technically supported the development of a digital, fully automated oxygen transfer efficiency device funded by the California Energy Cemmission. Continued research on energy efficiency improvement in the agricultural industry. Supervisor of a research team in the industrial, water and agricultural sectors.

*Edison Technology Solutions, an Edison International Company 1998 - 1999*
**January 1998 – October 1999, Senior Project Manager**
Responsible for the development and coordination of an energy efficiency program in the water and wastewater area involving a multi million dollar research program to improve energy efficiency by advancing the following technologies: ultraviolet light use as a disinfectant; advanced oxidation processes; solids and salinity removal technologies; biological denitrification; freeze-thaw solids dewatering; and, water/wastewater plant energy efficiency assessments. Responsible for the development and coordination of agricultural projects utilizing advanced and developing technologies to improve the efficiency and productivity of the agricultural community. The work above was funded by the California Energy Commission

*Southern California Edison Company, Irwindale, CA, 1972 – 1997*
**1995 – 1997, Consulting Engineer**
Evaluated and tested technologies for the treatment of water and waste water. Integrated research activities with major U.S. water agencies and regional water treatment districts.

**1991 – 1994, Project Director, Advanced Integrated Recycling Project**
Conceived, developed and implemented gasification technologies to convert refuse-derived fuel into a clean, low Btu gas, acting as a natural-gas substitute in a utility or industrial boiler. This effort has progressed from project conception through project development and conceptual engineering. Developed a detailed business plan and economic proformas with appropriate sensitivities for the implementation of 1000 to 3000 ton-per-day refuse-gasification facilities. Was awarded a U.S. Patent on the entire fluidized-bed gasification concept from feed system through gasifier and gas clean-up.

**1989 – 1991, Project manager, Industrial Boiler NOx Control**
Researched and developed innovative NOx reduction equipment for industrial boilers. Assisted in pioneering new advanced NOx control devices to meet special and unique customer requirements. Demonstrated advanced NOx reduction devices on Edison customers boilers.

**1981-1989, Program Manager, Energy Recovery from Wastes/Biomass Program**
Developed and implemented all Edison waste and biomass-to-energy projects, including design, development and demonstration of the largest fixed-bed downdraft wood gasifier. Obtained a patent for the above design. The gasifier used industrial wood waste and transformed it into a low Btu gas which was used directly in one of Edison's utility boilers. The project was a technical success but, due to the lowering of natural gas and oil prices, was closed.

**Program Manager, Utilization of Cooling Tower Blowdown Project**
Developed a water conservation and re-use demonstration project at Edison's Etiwanda Generating Station.

**1977 – 1981, Program Manager of the Waste and Biomass Energy Recovery Program**
Developed and analyzed anaerobic digestion technology to utilize sewage sludge and municipal waste to produce methane gas for use in existing generating stations.

**1972-1977, Project Manager, Water Programs**
Responsible for the design of San Onofre Nuclear Generating Station Units 2 & 3 circulating water system for the preservation of the marine environment. The design resulted in four patents and was implemented with success, exceeding that anticipated from the laboratory results. Responsible for the design, construction and operation of the Redondo and Ormond Beach Marine Research Laboratories.

**Professional Affiliations / Registration:**

American Society of Civil Engineers
Registered Professional Civil Engineer, State of California
American Water Works Association
Southern California Waste Management Forum
Air and Waste Management Association

# EXHIBIT A ATTACHMENT A-3
# RESUMES

August 2004

**PROFESSIONAL RESUME**
**Michael K. Stenstrom**


| | |
|---|---|
| Professor | (310) 825-1408 (work) |
| University of California | (310) 876-3799 (home) |
| Civil & Environmental Engineering Dept. | (310) 206-5476 (FAX) |
| 5714 Boelter Hall | (310) 876-3798 (home FAX) |
| Los Angeles, CA 90095-1593 | stenstro@seas.ucla.edu |
| | www.seas.ucla.edu/stenstro |


**EDUCATION**

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|---|---|---|
| 1976 | Ph.D. | Environmental Systems Engineering, Clemson University, Clemson, SC. Minors in Chemical and Electrical Engineering. Dissertation Title: “A Dynamic Model and Computer Compatible Control Strategies for Wastewater Treatment Plants”. |
| 1972 | M.S. | Environmental Systems Engineering, Clemson University. Thesis Title: “Biological Process Simulation for Operator Training”. |
| 1971 | B.S. | Electrical and Computer Engineering, Clemson University. |

**REGISTRATION**

Registered Professional Civil Engineer, California C35497, 1982 - present
Diplomate, American Academy of Environmental Engineers, 1989 - present

**HONORS AND AWARDS**

Engineering Science/Association of Environmental Engineering Professors Award (AEEP) for the best doctoral thesis relevant to sanitary engineering practice (1975-76), UC Regent's Junior Faculty Fellowship (1978-79), Walter L. Huber Civil Engineering Research Prize ASCE (1989), Harrison Prescott Eddy Research Award, WEF (1992), Dow Chemical Company Environmental Care Award (1995), Science Coalition's Great Advances in Scientific Discovery (1999), Innovation in Water Quality Protection (California Regional Water Quality Control Board, 2002), Tau Beta Pi, Phi Kappa Phi, Sigma Xi, Chi Epsilon

**PROFESSIONAL SOCIETY MEMBERSHIPS**

American Society of Civil Engineers
American Chemical Society
Association of Environmental Engineering and Science Professors
Canadian Association on Water Pollution Research and Control
International Water Association
Water Environment Federation

**WORK EXPERIENCE**

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| July 1, 1985 to Present | Professor, UCLA, School of Engineering and Applied Science. Responsibilities include teaching and research at the graduate and undergraduate levels and various administrative responsibilities. |
| January 1, 1985 July 1, 1992 | Academic Director for SEASnet (1985-1989), the School of Engineering and Applied Science network and later Assistant Dean (7/19/89) for Computing Resources. Responsibility for construction of a 1000 node network of workstation, mini and mainframe computers, including 3 IBM 370 machines, several classrooms of PCs and Macs and a variety of Unix workstations; supervision of 12.5 professional staff; management of a $1 million per year budget. |

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|---|---|
| July 1, 1981 to June 30, 1985 | Associate Professor, UCLA, School of Engineering and Applied Science |
| July 1, 1977 to June 30, 1981 | Assistant Professor, UCLA, School of Engineering and Applied Science. |
| August 1975 to September 1977 | Research Engineer and Project Manager (1-1-77) for the Amoco Oil Co., (Standard Oil (Indiana)), Naperville, IL. Primary duties included performing and managing experimental and theoretical investigations in the water and wastewater area. Principle areas of research included pilot and full-scale research of activated sludge, bio-disc, rapid sand filtration, gas stripping and activated carbon treatment processes. Duties also included principal process design responsibility for the end-of-pipe treatment facilities for five Amoco Oil refineries. |

**UNIVERSITY ADMINISTRATIVE EXPERIENCE**

2001-2003 Associate Dean, School of Engineering and Applied Science
1998-2000 Director, Institute of the Environment
1991-1999 Chair, Civil and Environmental Engineering Department
1989-1992 Assistant Dean, Computing Resources
1985-1989 and SEASnet Academic Director
1992-2003
1983-1988 Vice Chair, Civil Engineering Department
1980-1983 Vice Chair, Engineering Systems Department

**LISTED ACTIVITIES:**

- Consulting Activities: 39
- Refereed Publications: 90
- Conference and Other Publications: 112
- Submitted, Accepted, or in Press: 3
- Research Grants and Contracts: 58
- Reports: 43
- Patents: 5
- Seminars & Contributions to Conference and Symposia: 215